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A Triatoma maculata (HEMIPTERA, REDUVIIDAE, TRIATOMINAE) POPULATION FROM RORAIMA, AMAZON REGION, BRAZIL, HAS SOME BIONOMIC CHARACTERISTICS OF A POTENTIAL CHAGAS DISEASE VECTOR

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SUMMARY

Even though Chagas disease is rare in the Brazilian Amazon, the conditions for the establishment of domiciliated cycles prevail in many areas where triatomines are of frequent occurrence. In Roraima, a previous serological and entomological survey in three agricultural settlements showed the existence of all transmission cycle elements, i.e., individuals infected by *Trypanosoma cruzi,* triatomine species previously found harboring *T. cruzi* in the broader Amazon region of neighboring countries and, domicile/peridomicile conditions favorable to triatomine colonization. *Triatoma maculata* was the most frequent species, found in chicken houses in the peridomicile and sporadically within residences. Aiming to investigate the possibility of *T. maculata* to possess the potentiality to transmit *T. cruzi* in the area, bionomic characteristics were studied under laboratory conditions. These were feeding frequency, time for defecation after a blood meal, time elapsed in voluntary fasting pre- and pos-ecdysis, moulting time periods, pre-oviposition and oviposition periods and index of oviposition, incubation period, egg viability, longevity and mortality rate. Results show that the Passarão population of *T. maculata* should be considered a potential vector of *T. cruzi* since it shows a capacity to infest artificial ecotopes in the peridomicile, to carry out large number of meals during the nymphal cycle, to have a relatively short developmental cycle capable of producing 2.9 generations/year, to blood source eclecticism, to defecate immediately after the blood meal while still on the host and to the fact that has been previously found naturally infected by *T.cruzi*.

KEYWORDS: *Triatoma maculata*; Chagas disease; Amazon; Roraima; Brazil; Bionomic studies.

INTRODUCTION

Even though Chagas disease is rare in the Amazon region, the conditions for the establishment of domiciliated cycles prevail in many areas. Triatomine species potential vectors of Chagas disease are of frequent occurrence in those areas. In Roraima, a serological and entomological survey in three agricultural settlements and blood donor candidates showed the existence of all transmission cycle components (LUITGARDS-MOURA, 2001; LUITGARDS-MOURA *et al.,* 2005). These transmission cycle components were: individuals infected by *Trypanosoma cruzi*, triatomine specimens of potential vector species in the peridomicile (*Rhodnius robustus, Triatoma maculata, Panstrongylus geniculatus* and *Rhodnius pictipes*) and, domicile conditions for triatomine colonization. All species were found away from human dwellings with lower infestation and density indices except for *T. maculata*. *Triatoma maculata* was the most numerous species found in chicken houses in the peridomicile, presenting a peridomiciliary infestation index of 16.7 (number of annexes with triatomines/number of annexes x 100, WHO, 2002) and a crowding index of 12500 (number of triatomines captured/number of houses x 100, WHO, 2002) represented by the peridomiciliary collection of 375 specimens in chicken annexes of only three houses (out of 48 investigated houses) when 125 triatomines per chicken house were found living in chicken nests, underneath cardboard boxes, wood pieces, stones and bricks (LUITGARDS-MOURA *et al.,* 2005). This peridomiciliation is of particular interest in Chagas disease transmission. The adaptation to the human dwelling of vector species in deforested areas is thought to be linked to the recent findings of *T. cruzi* in human populations in the Amazon (COURA, 1990; WALSH *et al.,* 1993) where the low frequency of human autochtonous cases of Chagas disease contrasts with the high infection indices found in reservoirs and vectors (VALENTE & VALENTE, 1993). The present study was conducted in order to observe whether this *T. maculata* population shared other biological traits, than the observed colonization of the human

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environment, which would point it out as being a potential Chagas disease vector in the area. Among those traits, triatomine feeding frequency and speed of defecation after a blood meal is of great importance for *T. cruzi* transmission (DIAS, 1956; COSTA & JURBERG, 1990; ALMEIDA *et al.,* 2003). Notwithstanding the fact that triatomine infection was not observed, the triatomine species collected were previously found harboring *T. cruzi* in natural habitats in the broader Amazon region of neighboring countries, some of which actively involved in Chagas disease transmission. *R. robustus* is the main sylvatic cycle vector in Venezuela (CARCAVALLO *et al.,* 1975; OTERO *et al.,* 1975). In the Venezuelan endemic rural area houses were also found infested with *T. maculata, P. geniculatus, R. robustus, R. pictipes* and the main domiciliated vector *R. prolixus* (TONN *et al.,* 1976; TONN *et al.,* 1978; ZELEDON & RABINOVICH, 1981). In the Guyanas, Venezuela and Colombia *T. maculata, R. pictipes*, *P. geniculatus* were found naturally infected (DIAS & TORREALBA, 1936; DIAS, 1952). *R. robustus* was present in those areas but not infected (DIAS, 1952). In Venezuela, *T. maculata* was found naturally infected by *T. cruzi* and *T. rangeli* (PIFANO, 1973; SIFONTES, 1976). In the Brazilian Amazon *P. geniculatus, R. pictipes* and *R. robustus,* but not *T. maculata,* were found infected by *T. cruzi* or *T.cruzi*-like (ALMEIDA, 1971; BARRET, 1988; COURA *et al.,* 1994; COURA *et al.,* 1999; VALENTE *et al.,* 1999). In Roraima there are no reports in the literature of naturally infected triatomines. Specimens of *Rhodnius, Panstrongylus* and *Eratyrus* were collected in the Maracá Ecological Station (RAFAEL & PY-DANIEL, 1989). *T. maculata* was previously described in Roraima (MILES *et al.,* 1981; PESSOA, 1988).

The success of a triatomine species as vector depends among other variables on the susceptibility to infection, the frequency of blood meals, the characteristic of defecating during or shortly after the blood meal and the starvation resistance (DIAS, 1956; PELLEGRINO, 1952; PERLOWAGORA-SZUMLEWICZ, 1954; 1969).

This work is part of the first epidemiological study on Chagas disease conducted in agricultural settlements in Roraima (LUITGARDS-MOURA, 2001; LUITGARDS-MOURA *et al.,* 2005). *Triatoma maculata* was the most numerous species found in chicken houses in the peridomicile. The experiments conducted aim to investigate some bionomic characteristics of *T. maculata* that may account for the potential participation of the species as vector in the studied area. Variables examined were feeding frequency, time for defecation after a blood meal, time elapsed in voluntary fasting pre- and pos-ecdysis, moulting time periods, pre-oviposition and oviposition periods and index of oviposition, egg incubation period, egg viability, longevity and mortality rates.

MATERIALS AND METHODS

A colony was initiated with 46 nymphs of *T. maculata* collected during August-September 2000 at the Passarão Project (area comprised from 03°05' to 03°20'N and 60°35' to 60°43'W), Roraima, Brazil. Specimens were transported to the triatomine insectarium laboratories (Department of Entomology, FIOCRUZ, Rio de Janeiro) reared at room temperature (temperature mean 27.6 ºC, min. 21.5 ºC, max. 32 ºC and humidity mean 77.5%, min. 52%, max. 96%). Feeding was performed *ad libitum* weekly on mice *Mus musculus* until imaginal ecdysis. The experiments were carried out in the F1 of these wild-caught nymphs kept in the same environmental conditions as the parental generation.

Forty same-day ecloded nymphs were placed individually in plastic jars (4 cm square base, 9 cm height) with a piece of folded filter paper (Klabin 80) as substrate and a perforated plastic cover, for daily observation of bionomic parameters as follows, using techniques formerly described (ALMEIDA, 2000).

1. Time for defecation after a blood meal and number of blood meals: Once a week insects were individually transferred to circular plastic arenas (∅ 10 cm, 15 cm height, with a piece of filter paper as substrate) together with a ketamin anaesthetized mouse (0.35 mg/kg of body weight dose). The rate for the mean number of accepted blood meals/mean number of offers (in weeks) was calculated individually for each nymphal stage. The elapsed time between the end of feeding and defecation was registered. The end of the blood meal was registered when the proboscis was retracted. When insects defecated during the act of feeding, the time for defecation was set to 0 (immediate defecation).

2. Voluntary fasting before and after ecdysis: For this observation, mice was offered daily (experiment was set as described in 1) during a period of 10 min. The number of days that the insect refused a blood meal offer before and after moulting was registered.

3. Period of inter-moulting: The amount of days between ecdysis for every nymphal stage (N1 to N5) to imaginal emergence was registered in days.

4. Oviposition indices: Recently F1 emerged adults were paired in 16 couples in plastic containers (as described before for nymphs). There were observed the number of days required for female adults to oviposite (pre-oviposition period), the number of ovipositing females in the total of females (the oviposition index) and the number of eggs per female. Eggs were placed in individual containers for the observation of the number of days for 1st instar nymphs to eclode (the incubation period) and the number of nymphs ecloded in the total of laid eggs (the egg viability).

5. Longevity: The life span in number of days for males and females was observed.

6. Mortality rate: The number of dead insects for each nymphal stage and the percentage from the total initial of specimens was counted.

RESULTS

1. Time elapsed for defecation after a blood meal and number of meals: Fifth stage nymphs defecated fastest after a blood meal, i.e., 71% of the specimens defecated within 30" and only 3% defecated after 2'30". Adult females, N1 and adult males followed in fastest elapsed times for defecation (69%, 62% and 50% within 30", respectively) (Fig. 1). As insects developed, an increase in blood meals offerings and acceptances were observed due to the increased period required for moulting in older nymphal stages. The rates between the mean number of accepted blood meals/mean number of offers remained the same (0.5, 0.6, 0.6, 0.6 and 0.5 for N1 to N5 respectively) showing

Table 1
Inter-moulting duration periods and blood meals (offered and accepted) of *Triatoma maculata* during development

Nymphal Stage	Inter-moulting period		Blood Meal*		
	Mean ± SD(days)	(Min.-Max.)	Mean ± SD		(Min.-Max.)
N1	17.8 ± 2.2	(17-24)	Offered	2.1 ± 0.3	(2-3)
n = 39			Accepted	1.1 ± 0.2	(1-2)
N2	20.8 ± 14.6	(15-100)	Offered	2.9 ± 2.1	(1-14)
n = 35			Accepted	1.7 ± 1.5	(1-9)
N3	20.9 ± 2.6	(15-27)	Offered	3 ± 0.6	(2-5)
n = 34			Accepted	2.1 ± 1.7	(1-3)
N4	24.9 ± 6.1	(19-44)	Offered	3.7 ± 0.9	(3-6)
n = 34			Accepted	2.1 ± 0.6	(1-4)
N5	41.4 ± 13.5	(29-110)	Offered	5.9 ± 1.1	(4-9)
n = 32			Accepted	3.9 ± 1	(2-6)
Females	125.2 ± 22	(103-199)	Accepted	9.8 ± 6	(3-3)
n = 22					
Males	122.1 ± 14.8	(102-164)	Accepted	9.5 ± 6	(2-1)
n = 10					

**Mus musculus* was offered weekly; SD - standard deviation; Min. - minimum, Max. - maximum, n = Nb. of specimens

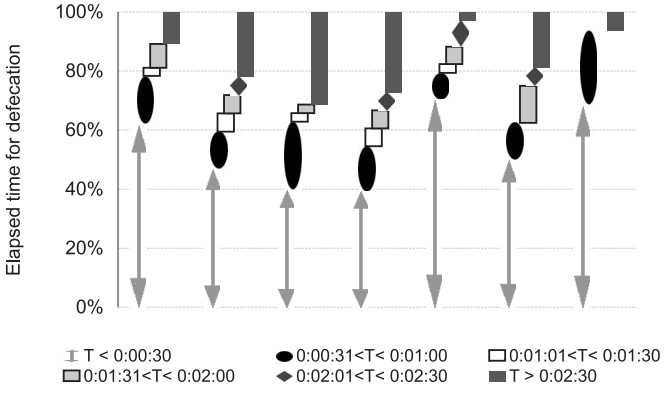

Fig. 1 - Elapsed time for defecation after a blood meal for nymphal stages and adults of *Triatoma maculata.*

one acceptance for every other offer (Table 1). An average of 10 meals was observed throughout nymphal stage (Table 1).

2. Voluntary fasting before and after ecdysis: Pos-ecdysis nymphs of all stages accepted a blood meal faster, taking 4.3 days mean to accept a meal while pre-ecdysis ones took 13 days mean (Table 2). The longest post-ecdyse fasting period was observed for adult females (7.4 days mean) and the shorter one for N4 (3 days mean). Pre-ecdysis N5 refused food for a longer period (17.6 days mean) while N2, N3 and N4 presented the shortest fasting period, around three days (Table 2). N1 displayed the shortest pre-ecdysis fasting period, 11.1 days mean (Table 2).

3. Period of inter-moulting: The total developmental period (egg to imaginal ecdysis) was approximately 120 days at room temperature (125.2 days mean for females and 122.1 for males) (Table 1). As the development advanced a higher number of days was necessary for moulting, 17.8 days between N1 and N2 while 41.4 days were required between N4-N5 (Table 1). During the 120 days required from N1 to imaginal emergence (that extended from November 24, 2000 to April 16, 2001), laboratory minimum and maximum temperatures were registered twice daily at 9:00h and at 15:00h. During N1 development minimum and maximum temperature means were 27.4 ºC and 28.7 ºC, while for N2 it was 28.2 ºC and 30 ºC, for N3 - 28 ºC and 29.9 ºC, for N4 - 28.5 ºC and 30.6 ºC and for N5 - 28.3 ºC and 30.4 ºC.

4. Oviposition indices: Pre-oviposition period was 11.6 days mean for 16 females paired in couples. During a period that extended for a maximum of 272 days (229 days mean), those 16 females laid a total

Table 2
Voluntary fasting period before (pre-ecdysis) and after moulting (pos-ecdysis) in days for *Triatoma maculata*

Stage	n	Mean ± SD(days)	(Min.-Max.)
Pos-eclosion egg-N1	39	6.4 ± 1.6	(6-13)
Pre-ecdysis N1-N2	39	11.1 ± 0.3	(11-12)
Pos-ecdysis N2	35	3.1 ± 1.2	(2-10)
Pre-ecdysis N2-N3	35	12.3 ± 1.9	(6-21)
Pos-ecdysis N3	34	3.1 ± 2.5	(1-9)
Pre-ecdysis N3-N4	34	12 ± 2.2	(7-18)
Pos-ecdysis N4	34	3 ± 3	(1-14)
Pre-ecdysis N4-N5	34	12.2 ± 2.2	(7-15)
Pos-ecdysis N5	32	5.8 ± 3	(1-15)
Pre-ecdysis N5-adult	32	17.6 ± 4.4	(11-32)
Pos-ecdysis adult female	22	7.4 ± 2	(16-18)
Pos-ecdysis adult male	10	7.2 ± 3	(20-21)

n = Nb. of specimens

of 4091 eggs (a mean of 255.7 eggs/female), 72.8% of which viable. Room temperature was verified throughout the oviposition period in the morning and in the afternoon and daily averages were calculated. Egg incubation period varied from 14 to 42 days, depending on the temperature (- 0.98 correlation, i.e., the bigger the room temperature, the lower the incubation temperature, Fig. 2).

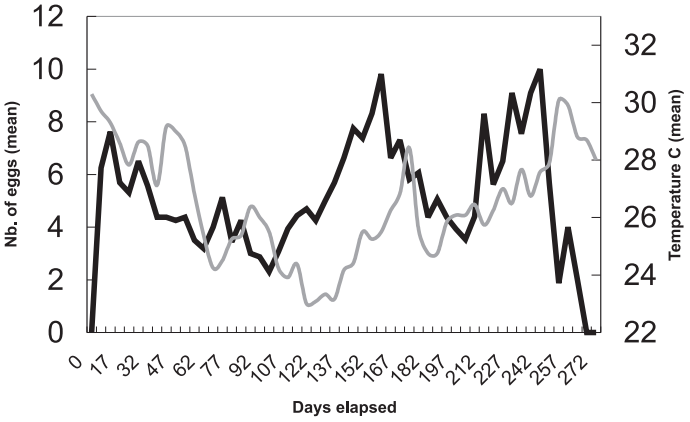

Fig. 2 - Number of eggs laid (mean) and room temperature values (mean) for *Triatoma maculata.*

5. Longevity: Maximum longevity was 373 for males (250 mean) and 289 for females (246 mean) (Table 3).

6. Mortality index: Thirty-four specimens reached adulthood (18 females and 16 males out of the initial forty N1 specimens). The percentage of dead specimens at nymphal stage was 15% (n = 6, two specimens at N1, three at N2 and one at N3).

Table 3
Longevity, pre-oviposition period, number and viability of eggs laid for *Triatoma maculata* females

		Mean ± SD	(Min.-Max.)
Longevity (days)	Females	246 ± 4.9	(197-289)
	Males	250 ± 6.9	(155-373)
Pre-oviposition period (days)		11.6 ± 1.9	(7-23)
Nb. of eggs laid per female		255.7 ± 6.9	(183-327)
Viability of eggs (%)		72.8 ± 3.9	(38-96)

DISCUSSION AND CONCLUSION

T. maculata, considered to be an ornithophilic species, readily accepted *Mus musculus* blood showing a post-ecdyse fasting period and developmental cycle that may indicate acceptance and easily metabolization of this blood source. Ornithophilism for some triatomines could be an opportunistic behaviour rather than a selective feature (DIOTAIUTI & DIAS, 1987). The elapsed time between the end of the meal and defecation showed that *T. maculata* reached indices similar to other triatomine vector species such as *Triatoma infestans, Triatoma brasiliensis*, *P. megistus*, *R. prolixus* and *Triatoma rubrovaria* (Table 4).

Pos-ecdysis nymphs of all stages showed to be hungrier than pre-

Table 4
Nymphal stage period, number of eggs laid, blood source and temperature for *Triatoma maculata* and other closely related triatomine species

Species	Blood source *in natura*	Geographical origin	Experimental blood source	Blood meals (mean)	Nymphal duration period (days)	Nb. of eggs (mean)	Temperature (mean)	Reference
T. maculata	Not verified	Passarão, Roraima State, Brazil	*Mus musculus*	10.1	120[3]	256	27.4 - 28.7 ºC[4]	This work
T. maculata	Not cited	Not cited [1]	*Gallus gallus*	Not cited	160	Not cited	28 ºC	Feliciangeli & Rabinovich 1985, Espínola *et al.* 1981
T. maculata	Birds	Not cited [2]	*Gallus gallus*	Not cited	192	Not cited	25 ºC	Silva *et al*. 1995
T. maculata	Birds	Not cited [2]	*Gallus gallus*	Not cited	154	Not cited	30 ºC	Silva *et al.* 1995
T. pseudomaculata	Chicken and pigeons mainly	Not cited	*Columba livia*	14.7	398	264	28 ºC	Gonçalves *et al*. 1997
T. brasiliensis	Rodents mainly	Simplício Mendes, Piauí State, Brazil	*Mus musculus*	11	160	142	24 ºC	Soares *et al*. 2000
T. infestans	Not cited	Minas Gerais State, Brazil	*Gallus gallus*	Not cited	131-134	649 ± 123	26 - 28 ºC	Perlowagora-Szumlewicz 1969
T. rubrovaria	Rodents mainly	Santana do Livramento, Rio Grande do Sul State, Brazil	*Mus musculus*	11.1	180	Not cited	28 ºC	Almeida *et al.* 2003

[1] Colony maintained for five years in the Insectary of the Division de Endemias Rurales, Venezuela; [2] Colony from the Insectary of the Oswaldo Cruz Institute-FIOCRUZ, Rio de Janeiro, Brazil; [3] 125.2 for females and 122.1 for males; [4] Room temperature (variable during the study, see text)

ecdysis ones. Pos-ecdysis nymphs required 4.3 days mean to accept a blood meal while pre-ecdysis nymphs took 13 days mean to accept a meal (Table 2). Pre-ecdysis metabolism changes aiming storage and energy usage for moulting would be responsible for this figure (DIOTAIUTI & DIAS, 1987). In addition, insects may have less appetite due to this energy storage (DIOTAIUTI & DIAS, 1987). Thus, after moulting an increase in appetite would be expected due to the long period of fasting in pre-ecdysis.

The time for defecation is inversely proportional to the amount of blood ingested and positively proportional to elapsed fasting time and weight of the insect (TRUMPER & GORLA, 1991). The amount of ingested blood and feeding frequency period are also density-dependent (TRUMPER & GORLA, 1991). Being so, low-density triatomine populations may represent a higher transmission risk than high-density populations, a situation that may occur in infestation (e.g. colonization) and re-infestation (e.g. after insecticide spraying).

It has been shown that elapsed defecation time of more than one min following feeding correspond to a departing distance > 3 cm from the bite site, in most cases (ALMEIDA *et al.,* 2003). *T. cruzi* transmission is therefore facilitated when a given species has the characteristic of defecating either during or less than one min after feeding (ALMEIDA *et al.,* 2003). Most of the N5 defecations (71%) occurred within 30" after the blood meal, demonstrating the importance of this behavior in *T. maculata* as a potential vector.

Inter-moulting and developmental time periods might be affected by temperature and blood source. Developmental period was approximately 120 days at a room temperature mean of 28.5 ºC for *T. maculata* fed on mice. Longer periods were observed for *T. maculata* using *Gallus gallus* as blood source, e.g., 154 days at 30 ºC (SILVA *et al.*, 1995), 160 days at 28 ºC (FELICIANGELI & RABINOVICH, 1985; ESPÍNOLA *et al.,* 1981) and up to 192 at 25 ºC (SILVA *et al.*, 1995) (Table 4).

Pre-oviposition period for *T. maculata* was 11.6 days mean at 28 ºC. Similar results were found for *T. infestans* with 15 - 16 days mean (PERLOWAGORA-SZUMLEWICZ, 1969), *T. brasiliensis* with eight days mean at 30 ºC (BRASILEIRO, 1982), *T. rubrovaria* with 15 days at 25 ºC and 13 days at 30 ºC (SILVA, 1985).

T. maculata laid an average of 256 eggs per female. Comparable results were found for *T. brasiliensis* and *T. pseudomaculata* that had 142 and 264 eggs/female, respectively (GONÇALVES *et al.,* 1997; SOARES *et al.,* 2000) (Table 4).

Hatching or egg incubation period varied from 14 - 42 days for *T. maculata*, accompanying temperature variation (23.6 - 29.3 ºC, - 0.98 correlation). Egg incubation period for *T. maculata* was previously observed to be 19 days mean (at 28 ºC, FELICIANGELI & RABINOVICH, 1985), while *T. pseudomaculata* had 18 days (at 28 ºC, GONÇALVES *et al.* 1997) and *T. infestans* showed a period variation from 27 to 46 days (at 18.5 - 28.7 ºC range, HACK, 1955). *T. infestans* could initiate egg eclosion on day 11 after oviposition, although eclosion usually occurred between days 17 - 20 (at 24 to 28 ºC, PERLOWAGORA-SZUMLEWICZ, 1953).

Only around the week 28 after reaching the adulthood females start to die, decreasing oviposition. The longevity of the females was 246 days mean. During their lives, females presented 11.6 days mean pre-oviposition period. Females laid eggs continuously for 229 days mean, withhelding a fertility period of 241 days mean. Thus, it is estimated that females remain fertile until near to their death.

Older stages required more time to moult (N1 - N2 = 17.8 days, N4 - N5 = 38.8 days average), with individual variations observed (N2 - N3 presented the biggest variances = 14.6 days). However, because insects were kept at room temperature, environmental temperature changes verified during nymphal stages may have affected moulting period duration. Increase in temperatures within a certain limit, usually accelerated development (SILVA *et al.,* 1995).

T. maculata specimens from Venezuela were found to have fed on bird blood (TONN *et al.,* 1978). The ornitophilic behaviour of *T. maculata* was also observed in the present study, not only in Passarão, but also in a preliminary investigation in Normandia, Bonfim and Uiramutã Municipalities all in the Roraima savannah region, where many specimens were collected in the chicken houses. The use of mice as blood source may have shortened the development time duration for *T. maculata.* A closely related species, *T. pseudomaculata* is reported as having 240 days development approximately from egg to adult when pigeon was used as blood source (at 28 ºC, GONÇALVES *et al.,* 1997). This might demonstrate that the frequent verified association of *T. maculata* with birds is oportunistic rather than adaptative and that the biotic potential may be favored through a more frequent contact with mammal blood found in the peri- and intradomicile.

N5 were able to stay without food for longer periods (17.6 days) than the younger stages (N1 = 11.1 days) even when a blood meal source was offered daily. This endurance characteristic and also the fact that females remain fertile until close to their death show the epidemiological importance of the *T. maculata* Passarão population. Also, only 15% of the nymphs died demonstrating the resistance of the species during nymphal period.

Triatoma maculata showed characteristics that could account the species as a potential *T. cruzi* vector. *T. maculata* nymphs fed frequently, defecated while still in the host, i.e. during feeding and immediately after proboscis retraction, were able to develop using mouse blood as food source, could fast and presented low mortality rates during nymphal stages. These results indicate *T. maculata* as a potential *T. cruzi* vector.

Aditional experiments should be conducted aiming the comparison using at least one alternative blood source (e.g. bird) for feeding, defecation, longevity and mortality rates for *T. maculata* specimens. Also, susceptibility infection experiments encompassing differentiation aspects should be carried out to corroborate *T. maculata* population of Passarão, Roraima, as a good vector for *T. cruzi.*

CONCLUSIONS

The Passarão population of *T. maculata* should be considered a potential vector of *T. cruzi* since it shows a capacity to infest artificial peri-domiciliary ecotopes as represented by the colonization of chicken

house annexes, to blood source eclecticism achieving full development in a different blood source from that used in the natural ecotopes, to defecate immediately after the blood meal while still in the host and to the fact that has been previously found naturally infected by *T.cruzi*. The species shall be under constant entomological vigilance.

RESUMO

Uma população de *Triatoma maculata* (Hemiptera, Reduviidae, Triatominae) proveniente de Roraima, Amazônia, Brasil, possui algumas características bionômicas de vetor potencial de doença de Chagas

A doença de Chagas é de rara ocorrência na Região Amazônica Brasileira, onde contudo as condições para o estabelecimento de ciclos domésticos existem. Um estudo previamente realizado em áreas de colonização agrícola no Estado de Roraima, mostrou a possibilidade de ciclos autóctones de transmissão virem a ocorrer uma vez que todos os elementos estavam lá presentes, indivíduos infectados por *Trypanosoma* cruzi, espécies de triatomíneos anteriormente descritas como infectadas por *T. cruzi* na Região Amazônica de países fronteiriços e, ambientes domiciliares e peri-domiciliares favoráveis à colonização de triatomíneos. *Triatoma maculata* foi a espécie mais frequentemente encontrada, tendo sido coletada em galinheiros no peridomicílio e esporadicamente nos domicílios. Visando investigar a potencialidade de *T. maculata* como espécie vetora na área, algumas características bionômicas foram estudadas em condições de laboratório incluindo freqüência de alimentação, tempo de defecação pós-prandial, tempo de jejum voluntário na pré- e na pós-ecdise, período inter-mudas, períodos de pré-oviposição e de oviposição, índice de oviposição, período de incubação, viabilidade dos ovos, índices de longevidade e de mortalidade. Os resultados mostraram que a população de *T. maculata* da Colônia Agrícola do Passarão deve ser considerada vetora em potencial do *T. cruzi* uma vez que mostrou capacidade de infestar ecótopos artificiais no peridomicílio, de se alimentar com freqüência durante o período ninfal, de possuir um ciclo de desenvolvimento relativamente curto com 2,9 gerações/ano, de possuir hábitos ecléticos de alimentação, de defecar imediatamente após a hematofagia quando ainda no hospedeiro e devido ao fato de ter sido previamente encontrada infectada por *T. cruzi*.

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